

XVIII.—*A Case of Abnormal Dentition in a Dhole, or Indian Red Dog* (*Cuon dukhunensis*). By R. I. POCK, F.L.S., F.Z.S., Superintendent of the Zoological Society's Gardens.

WHEN discussing variation in the premolars of the Canidæ, Mr. Bateson * commented on the rarity of the occurrence of a fifth premolar in the lower jaw, only three or four cases being known to him. Two of these were quoted by Hensel †, the skulls presenting the abnormality being those of wolves showing two teeth between the canine and the second premolar, one in the right mandible and the other in the left. The other cases were those of domestic dogs, one presenting five premolars on both sides of the lower jaw, the other showing two alveoli where the first premolar should have been.

Since the number of recorded instances is so small, it is of interest, I think, to report the presence of a supernumerary premolar in the right mandible of a specimen of an Indian dhole (*Cuon dukhunensis*) that formerly lived in the Zoological Gardens.

The dentition of the left mandible is normal and resembles that of the mandibles of two other specimens imported at the same time, except that the posterior cusp on pm^3 is practically absent and the roots of pm^2 are united. In the right mandible also the cusp is absent and the roots of pm^2 are united. On both sides pm^1 is single-rooted; pm^2 , as stated, has two large coalesced roots set in a correspondingly large constricted alveolus; pm^3 has two large somewhat Λ -shaped roots. There is no difficulty in homologizing these three teeth on the two sides, their size and the shapes of the crowns and roots making their identity unmistakable. The supernumerary tooth lies between pm^2 and pm^3 and is not structurally quite identical with either. Its crown is shorter than that of pm^2 , and it has its posterior portion more widely rounded than is that of pm^2 or of pm^3 . Like pm^3 it has two distinct roots, but these are gradually attenuated and separated by a much narrower cleft.

On the left mandible with normal dentition the longitudinal axes of the crowns of pm^2 and pm^3 lie in the same line as the axis of the jawbone; and these teeth are separated from the adjacent teeth, pm^1 and pm^4 , and from each other by

* 'Materials for the Study of Variation,' p. 211 (1891).

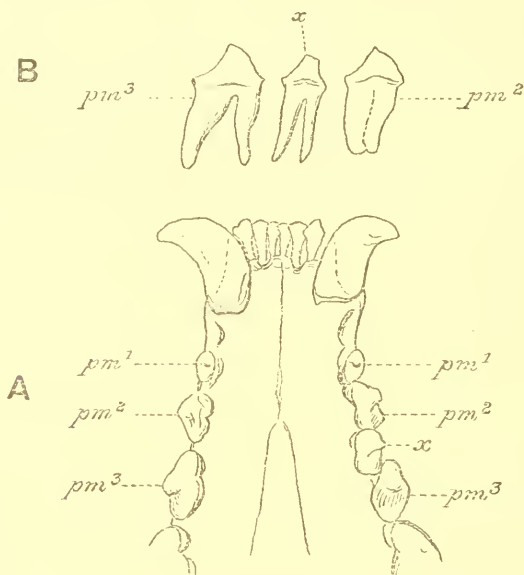
† Morph. Jahrb. v. p. 518 (1879); also Bateson, p. 213, no. 231.

distinct diastemata. This arrangement is disturbed on the right side by the presence of the supernumerary tooth. The axis of pm^2 is inclined slightly forwards and inwards, that of pm^3 slightly forwards and outwards, so that the two axes if continued would cut one another at an obtuse angle of about 135° . The two teeth are separated by a comparatively wide diastema, in which towards the inner side is wedged the supernumerary tooth, the axis of which is longitudinal, not oblique; its crown slightly overlaps in front the posterior portion of the crown of pm^2 and behind the anterior portion of the crown of pm^3 , and touches them both. The area between pm^1 and pm^4 on the left side is practically the same length as that on the right side, namely 20 mm.; but the sum of the two teeth, pm^2 and pm^3 , on the left side is 17 mm., while that of the corresponding teeth + the additional tooth on the right side is about 19 mm. The three teeth therefore are spread over a rather larger area than the two premolars of the left side, and this is gained by encroachment upon the diastemata separating pm^1 and pm^2 and pm^3 and pm^4 . There is no noticeable disparity in size between the normal premolars of the right and left mandibles.

Apart from the interest of the occurrence of this abnormality in the lower jaw, I am unable to find a parallel to it in the many instances of abnormality in the premolar dentition of the upper jaw in the Canidæ cited by Mr. Bateson. In most cases, both in wild species and in domestic dogs, where additional premolars are recorded there are two premolars resembling the normal pm^1 between the canine and pm^2 . Perhaps the nearest approach to the above-described variation in *Cuon dukhunensis* is presented by the skull of a specimen of the black-backed jackal (*Canis mesomelas*) (no. 228 of Bateson), which showed on the right side a supernumerary tooth inside the upper pm^2 , and closely resembling it, though a little smaller. But, as has been stated, the supernumerary tooth in this skull of *Cuon dukhunensis* differs both from pm^2 and pm^3 in the shape and size of the crown and also of its roots.

In this connection arises another interesting point. In the skull of *Cuon dukhunensis* under discussion the roots of pm^2 of the lower jaw are fused—or, to put it another way, not divaricated, either on the right or the left side. But this feature is, I think, abnormal in the genus, for I find that in two other skulls of this species as well as in one of a Siberian dhole (*Cuon alpinus*) the two roots of this tooth are quite distinct from base to point and resemble not a little in shape and direction the roots of pm^3 of all the dholes' skulls

examined (see the annexed figure). Hence it will be understood that the supernumerary lower premolar I have described, although unlike pm^2 of the skull to which it belongs in having its roots separated, resembles in this particular, at all events, the lower pm^2 of two skulls belonging to the same species and of one belonging to an allied species of the genus. The tooth



Abnormal Dentition in a Dhole (*Cuon dukhunensis*).

- A.** Anterior portion of lower jaw seen from above. pm^1 , pm^2 , pm^3 , first, second, and third premolars of right and left sides; x , supernumerary premolar of right side.
- B.** Second and third and supernumerary premolars of right side extracted.

may therefore be a slightly developed and slightly modified repetition of pm^2 , retaining in the matter of its separated roots the condition normal for the genus, which the genuine second lower premolars of this particular skull have lost. At all events, it does not appear to me to be justifiable to assume that the tooth is not an additional pm^2 on the grounds of the distinctness of its roots, although this conclusion would have commended itself had the one skull alone been available for examination.